

### **Remarks**

This Amendment is being filed in response to the Office Action mailed July 28, 2005. Per the petition and fee submitted herewith, the Applicants hereby claim a three month extension of time from October 28, 2005 to January 30, 2006 for responding (January 28 and 29, 2006 being weekend days). Please charge any deficiencies, or credit any overpayments, to deposit account no. 50-2719.

By operation of this amendment, claims 18 and 22 have been amended to correct typographic errors and to further clarify what is being claimed. Claims 13-15 have been amended to further clarify what is being claimed, and claim 16 has been canceled as redundant over claim 13. No new matter has been added by these amendments, and the scope of these claims has not been changed.

Claims 13, 18 and 22 have been amended to cancel references to variants of SEQ ID NOS: 2, 4 or 5, as recited. Cancellation of this subject matter is made without prejudice or disclaimer, and the Applicants reserve the right to pursue this subject matter in subsequent continuing applications.

Based on the above changes and the following remarks, reconsideration of the claims is respectfully requested.

### **Priority Documents**

The Applicants thank the Examiner for her thoughtful analysis of the priority applications US 09/144,914 filed on September 1, 1998, US 08/749,816 filed on November 15, 1996 and US 60/095,234 filed on August 4, 1998. Nevertheless, Applicants would like to point out that the present application also claims priority to US provisional application 60/119,727, filed on February 12, 1999 (see page 1, lines 3-4 of the present application). US 60/119,727, as discussed in the previously filed response, discloses the sequences of human (SEQ ID NO: 2) and mouse (SEQ ID NO: 4) TREK-1 and the C-terminal portion of human TASK. See, pages 16-20 of the US 60/119,727. See also pages 1 and 21 of US 60/119,727, which discloses a method of screening for substances having anesthetic properties, which produce a reversible state of unconsciousness with amnesia in a mammal upon inhalation. It is respectfully submitted that the present claims are fully supported by US 60/119,727, and that these claims are entitled to a

priority date of February 12, 1999. A copy of US 60/119,727 is enclosed for the Examiner's convenience.

Response to section 112, 2<sup>nd</sup> paragraph rejections

Claims 14-16, 18, 22 and 25 are variously rejected under 35 U.S.C. 112, 2<sup>nd</sup> paragraph as allegedly being indefinite. Each rejection is addressed specifically below.

Claims 14 and 15 are rejected as being indefinite because it is allegedly unclear if the recitation of TASK and TREK is limited to SEQ ID NOS: 2, 4 or 5, or if this recitation encompasses variants of these sequences which are at least 95% identical. The recitation of variants of SEQ ID NOS: 2, 4 or 5 has been deleted from claim 13, from which claims 14 and 15 depend. Claims 14 and 15 have been amended to indicate that the substance to be tested is contacted with a TREK-1 or TASK protein, respectively, and claim 16 has been canceled as redundant over the recitation of claim 13.

Claim 18 is rejected as being indefinite for lacking an antecedent basis for "TREK-1." This claim has been amended to include this antecedent basis.

Claims 18 and 22 are rejected as indefinite because it is allegedly unclear whether the recited anesthetics are being referred to collectively or in the alternative. These claims have been amended to clarify that these anesthetics are being referred to in the alternative.

Claim 22 is rejected as being indefinite for reciting "an amino acid according to SEQ ID NO: 5." This claim has been amended to clarify that the claimed amino acid consists of SEQ ID NO: 5.

It is believed that these amendments are sufficient to overcome the indefiniteness rejections of claims 14-16, 18, 22 and 25.

Response to the section 102(a) rejections

Claims 13-16, 18-23 and 25 are rejected under 35 U.S.C. 102(a) as allegedly being anticipated by Patel *et al.* (May 1999), *Inhalational anesthetics activate two pore domain background K<sup>+</sup> channels*, Nature Neuroscience 2:5, 422-426 (hereinafter "Patel 1999"). Claim 16 has been canceled, so the rejection is moot as to this claim. This rejection will be addressed with respect to the remaining claims.

As discussed above, Claims 13-15, 18-23 and 25 are entitled to at least an effective filing date of February 12, 1999, by virtue of this application claiming priority to US 60/119,727, and perhaps September 1, 1998. US 60/119,727 includes a complete description of COS cells transfected with mouse TREK-1 and human TASK for testing the effects of anesthetics. In addition, US 60/119,727 discloses the sequences of human and mouse TREK-1 (SEQ ID NOS: 2 and 4) and the C-terminal portion of human TASK. *See*, pages 16-20 of the provisional application. The provisional application further describes the method for identifying substances capable of producing amnesia and analgesia using the proteins. Another priority application, US 09/144,914 filed on September 1, 1998, discloses the sequences of both human and mouse (SEQ ID NO: 5) TASK. *See*, page 7, line 2 and SEQ ID NO: 5 of the '914 application. The subject matter of claims 13-15, 18-23 and 25 is thus fully supported by US 60/119,727 and US 09/144,914.

Patel 1999 was published in May of 1999, which is after the February 21, 1999 priority date of the present claims. Thus, it is respectfully requested that the §102(a) rejection based on Patel 1999 be reconsidered and withdrawn.

#### Response to the section 103(a) rejection

Claims 13-16, 18 and 20 are rejected under 35 U.S.C. §103(a) as being allegedly obvious over the combination of Franks and Lieb (Nature, 1988, vol. 333, pp. 662-664) with Patel *et al.* (1998) *A mammalian two pore domain mechano-gated S-like K<sup>+</sup> channel*, EMBO 17:15, 4283-4290 (hereinafter "Patel 1998"). Claim 16 has been canceled, so the rejection is moot as to this claim. This rejection will be addressed with respect to the remaining claims.

This application is a continuation-in-part (CIP) of U.S. Application No. 09/144,194, filed September 1, 1998. This application also claims the benefit of U.S. Provisional Application No. 60/119,727, filed February 12, 1999. The provisional application includes a complete description of COS cells transfected with mouse TREK-1 and human TASK for testing the effects of anesthetics. In addition, the provisional application discloses the sequences of human (SEQ ID NO: 2) and mouse (SEQ ID NO: 4) TREK-1 and the C-terminal portion of human TASK. *See*, pages 16-20 of the provisional application. The provisional application also describes the method for identifying substances capable of producing amnesia and analgesia

using the proteins. The '914 application describes the sequences of both human and mouse (SEQ ID NO: 5) TASK. *See*, page 7, line 2 and SEQ ID NO: 5 of the '914 application. Thus, these priority documents fully support the subject matter of Claims 13-16, 18 and 20.

Georges Romey is not included in the authorship of Patel 1998. Mr. Romey and the listed authors of Patel 1999 are together the entire inventive entity of the present application. Each listed author and Georges Romey made an intellectual contribution to the conception and reduction to practice of the claimed subject matter before the publication of Patel 1998. Indeed, the last page of Patel 1998 indicates that the manuscript which was published as Patel 1998 was "received on April 22, 1998; revised on May 26, 1998; accepted on June 2, 1998." The work of the present inventors which was ultimately published as Patel 1998 was therefore completed at least before April of 1998. Thus, Patel 1998 cannot be prior art to the instant application under 102(a), and cannot be combined with Franks and Lieb to form a rejection under §103. Because Franks and Lieb, when taken alone, does not describe or suggest each element of the claimed subject matter for at least the reasons set forth in the Official Action, it is requested that the rejection under §103 be reconsidered and withdrawn.

In any case, the combination of Franks and Lieb and Patel 1998 would not render obvious claims 13-15, 18 and 20. Rather, Franks and Lieb only teach one skilled in the art that it would be obvious to try and measure the  $I_{k(an)}$  current of TREK-1. There is no suggestion or disclosure in Franks and Lieb that such a measurement would be successful, or that the mammalian homologue of the Aplysia S-channel could be successfully used to screen substances capable of inducing the  $I_{k(an)}$  current. The combination of Franks and Lieb with Patel 1998 would therefore not render claims 13-15, 18 and 20 obvious, and the Applicants respectfully request withdrawal of the rejection under 35 U.S.C. 103(a).

Response to the section 112, 1<sup>st</sup> paragraph rejection

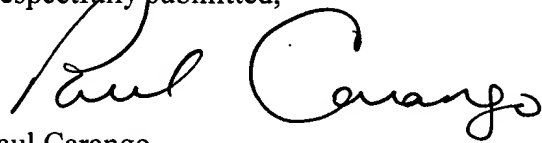
Claims 13-15, 18, 19, 20, 22 and 25 are rejected under 35 U.S.C. 112, 1<sup>st</sup> paragraph as allegedly lacking enablement for using variants of TASK or TREK-1 proteins to screen for substances having anesthetic properties. While the Applicants disagree, in order the advance prosecution, the claims have been amended to cancel any reference to variants of TASK or TREK-1 proteins, without prejudice or disclaimer. The Applicants reserve the right to pursue the

canceled subject matter in later-filed continuing applications. The Applicants therefore respectfully request withdrawal of the enablement rejection of claims 13-15, 18, 19, 20, 22 and 25.

Conclusion

In view of the foregoing, it is believed that the application is now condition for allowance, which action is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, reading "Paul Carango". The signature is fluid and cursive, with the first name "Paul" and last name "Carango" clearly distinguishable.

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